Remarks:

Reconsideration of the application, as amended herein, is respectfully requested.

Claims 1 - 15 and 17 - 18 are presently pending in the application. Claims 1 - 7, 9 - 15 and 17 - 18 are subject to examination and claim 8 has been withdrawn from examination. Claim 2 has been amended. Claim 16 was previously canceled. New claims 17 - 18 have been added. As it is believed that the claims were patentable over the cited art in their previously presented form, the claims have not been amended to overcome the references.

In item 3 of the above-identified Office Action, 1, 5, 7, 10 and 15 were rejected on the grounds of non-statutory type obviousness double patenting, as allegedly being obvious over claim 14 of U. S. Patent No. 7,268,619 to Applicant (the "'619 patent"), in view of U. S. Patent No. 6,075,411 to Briffa et al ("**BRIFFA**"). Applicant respectfully disagrees.

More particularly, Applicant's claim 1 recites, among other limitations,

> combining units, which respectively combine the X^2 signal, the in-phase component, the quadrature component, and an external signal with respective predistorting coefficients; and

an adder, which generates a predistored RF signal from the output of the combining units.

Correspondingly, Applicant's independent claim 10 recites, among other limitations:

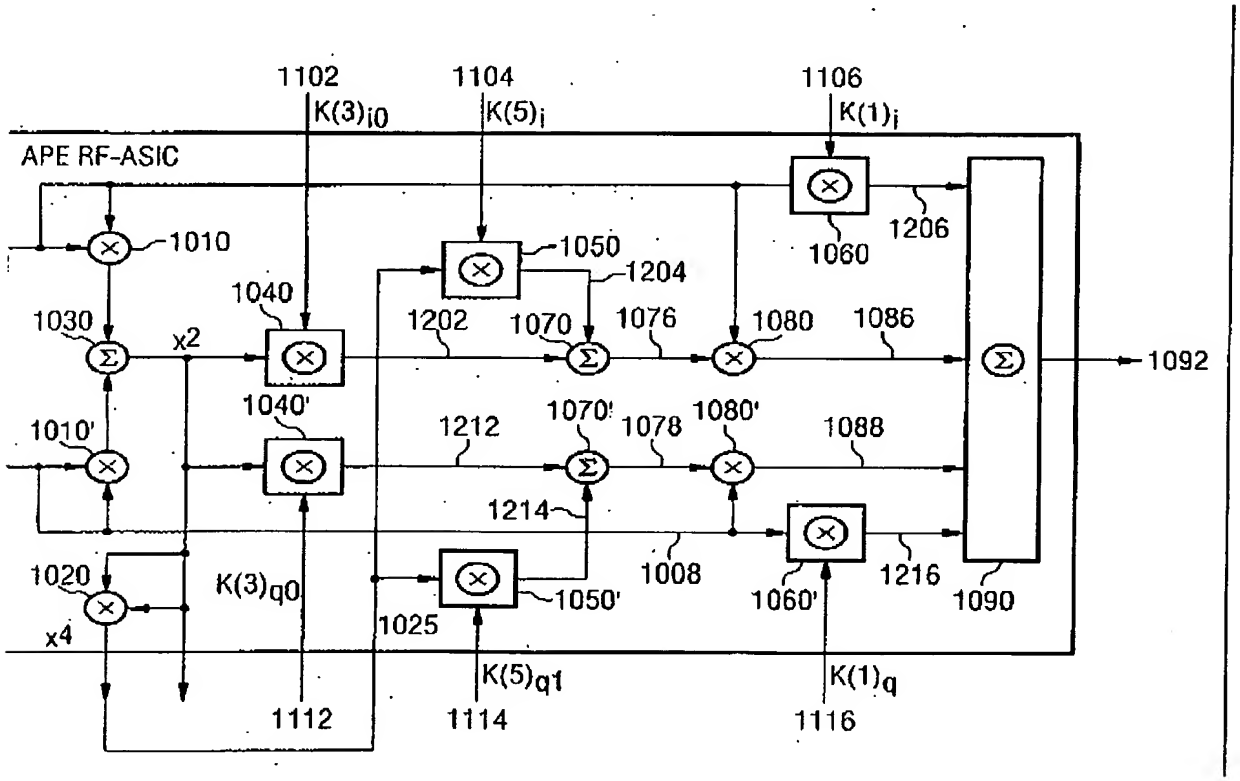
combining the X^2 signal, the in-phase and quadrature components, and an external signal with respective predistorting coefficients; and

generating a predistorted RF signal.

As such, Applicant's invention of independent claims 1 and 10 requires, among other things, generating a predistorted RF signal from an X^2 signal combined with its respective predistorting coefficient, an in-phase component combined with its respective predistorting coefficient, a quadrature component combined with its respective predistorting coefficient and an external signal combined with its respective predistorting coefficient. This is described, for example, in the specification of the instant application, in paragraphs [0103] - [0106] of the published application, and can be seen, for example, from Fig. 14 of the instant application.

However, in contrast to Applicant's invention of claims 1 and 10, claim 14 of the '619 patent does **not** teach or suggest generating a predistorted RF signal, as particularly claimed by Applicant. Page 3 of the Office Action states, in part

"claim 14 of US '619 fails to expressly disclose the respective inphase and quadrature signals **are** respective predistorting coefficients". Applicant is not claiming that the respective inphase and quadrature signals **are** respective predistorting coefficients, but rather, that they are **combined with** respective predistorting coefficients, **as are the X^2 and external signal**. This can be seen, for example, in Figs. 14 and 15 of the instant application. Fig 14 is being reproduced herebelow for convenience.



As described in paragraphs [0103] - [0104] of the instant application:

> Consider now the treatment of the in-phase component 1006 only. **A symmetrical treatment is given to the quadrature phase component 1008. Three combiners 1040, 1050, 1060 are provided each suitable for combining an RF signal with a corresponding coefficient provided by a controller device (not shown). The first of these combiners 1040 takes a first coefficient 1102 and the X^2 signal as input and generates a first combined signal 1202. The second combiner 1050 takes a second coefficient 1104 and an external signal 1025 as input and generates a second combined signal 1204.** The first and second combined signals 1202,1204 are added by an adder 1070 to give a sum 1076. The sum 1076 and the in-phase component 1006 are input into a multiplier 1080: the result being a first summand 1086.
>
> **The in-phase component 1006 is also input into the third combiner 1060 where it is combined with a third coefficient 1106.** The output of the third combiner 1060 is a second summand 1206. The symmetrical quadrature path results in two further summands 1088, 1216. **All four summands are summed in an adder 1090. The output of the adder 1090 is a predistorted signal 1092.** Provided the input coefficients are appropriate to a given PA, the predistorted signal 1092 should be compensated for at least some of the dominant mixing products in the PA transfer characteristics. [emphasis added by Applicant]

As such, in Applicant's invention of claims 1 and 10, **each** of the inphase signal 1006 of Fig. 14, the quadrature signal 1008 of Fig. 14, the external signal 1025 of Fig. 14 and the processed X^2 signal of Fig. 14are combined with **a respective** coefficient and provided to the adder 1090 of Fig. 14 (i.e., the inphase signal 1006 is combined with the coefficient 1106 at the multiplier 1060; the quadrature signal 1008 is combined with the coefficient 1116 at the multiplier 1060'; the external signal 1025 is combined with the coefficient 1114 at the multiplier 1050'; and the sum of the processed X^2 and X^4

signals are combined with the coefficient 1104 in the multiplier 1050). As such, as specifically recited in claims 1 and 10, Applicant's claims require, among other things, **combining the X^2 signal, the in-phase and quadrature components, and an external signal with respective predistorting coefficients** to generate the predistorted signal.

However, in contrast to Applicant's claimed invention, claim 14 of the '619 patent, even when taken in combination with the **BRIFFA** reference, fails to teach or suggest generating a predistorted signal as specifically claimed by Applicant and described above.

More particularly, as shown in Fig. 2 of the '619 patent, the terms X^2, X^4 and X^6 are multiplied by various coefficients taken from a memory (7A of Fig. 1 of the '619 patent) and provided to an summed and then multiplied by the original signal, after which the in-phase and quadrature components are multiplied to obtain the final predistortion signal. See, boxy 16 of Fig. 2 of the '619 patent. However, in contrast to the presently claimed invention, **neither the inphase component of the '619 patent, nor the quadrature component of the '619 patent, are multiplied by their respective coefficients**, as required by Applicant's claims 1 and 10, in order to generate

the predistortion signal. Thus, among other limitations of Applicant's claims, the '619 patent fails to teach or suggest **combining the X^2 signal, the in-phase and quadrature components, and an external signal with respective predistorting coefficients to generate the predistorted signal**, as required by Applicant's claims 1 and 10. Correspondingly, claim 14 of the '619 patent. Claim 14 of the '619 patent correspondingly fails to teach or suggest, among other limitations of Applicant's claims 1 and 10, **combining the X^2 signal, the in-phase and quadrature components, and an external signal with respective predistorting coefficients to generate the predistorted signal.**

However, in contrast to the allegations made on page 4 of the Office Action, the **BRIFFA** reference fails to provide a person of ordinary skill in this art with the teaching lacking from the '619 patent. Rather, in **BRIFFA**, the output signal of a main amplifier (13 of Fig. 3 of **BRIFFA**) is scaled by an amplification factor (43 of Fig. 3 of **BRIFFA**) and compared with the time delayed original signal, via subtraction (at coupler 45, 46 of Fig. 3 of **BRIFFA**). See, for example, col. 6 of **BRIFFA**, lines 55 - 67. The difference is detected at the detector (41 of Fig. 3 of **BRIFFA**), and used to calculate the predistortion coefficients (40 of Fig. 3 of **BRIFFA**). However, as shown more particularly, in Fig. 4 of **BRIFFA** , the

predistortion unit multiplies **only** the signals X and X^2 by the generated coefficients, but does **not multiply each of the X^2 signal, the in-phase and quadrature components, and an external signal with its respective predistorting coefficient to generate the predistorted signal**, as required by Applicant's claims 1 and 10. See, for example, col. 8 of **BRIFFA**, lines 1 - 9.

As such, the **BRIFFA** reference also fails to teach or suggest, among other limitations of Applicant's claims, **combining the X^2 signal, the in-phase and quadrature components, and an external signal with respective predistorting coefficients to generate the predistorted signal**, as required by Applicant's claims 1 and 10.

Thus, Applicant's claims would not be rendered obvious under 35 U.S.C. § 103(a) over claim 14 of the '619 patent alone, or in combination with **BRIFFA**, and thus, Applicant's claims do not constitute nonstatutory obviousness-type double-patenting.

Further, in item 5 of the Office Action, claims 1 - 4 and 10 - 13 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **BRIFFA**. In item 6 of the Office Action, claim 5 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **BRIFFA**, in view of U. S. Patent No. 5,577,236 to

Johnson et al ("**JOHNSON**"). In item 7 of the Office Action, claims 6 and 14 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **BRIFFA**, in view of U. S. Patent Application Publication No. 2003/0063686 to Giardina et al ("**GIARDINA**"). In item 8 of the Office Action, claims 7, 9 and 15 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **BRIFFA**, in view of U. S. Patent Application Publication No. 2002/0044014 to Wright et al ("**WRIGHT**").

As stated above, in **BRIFFA**, the output signal of a main amplifier (13 of Fig. 3 of **BRIFFA**) is scaled by an amplification factor (43 of Fig. 3 of **BRIFFA**) and compared with the time delayed original signal, via subtraction (at coupler 45, 46 of Fig. 3 of **BRIFFA**). See, for example, col. 6 of **BRIFFA**, lines 55 - 67. The difference is detected at the detector (41 of Fig. 3 of **BRIFFA**), and used to calculate the predistortion coefficients (40 of Fig. 3 of **BRIFFA**). However, as shown more particularly, in Fig. 4 of **BRIFFA**, the predistortion unit multiplies **only** the signals X and X^2 by the generated coefficients, but does **not multiply each of the X^2 signal, the in-phase and quadrature components, and an external signal with its respective predistorting coefficient to generate the predistorted signal**, as required by Applicant's claims 1 and 10.

Thus, for the reasons set forth above in connection with the double patenting rejection, among other reasons, Applicant's claims would not be rendered obvious under 35 U.S.C. § 103(a) over the **BRIFFA** reference.

Further, Applicant has added new claims 17 and 18 that recite, among other limitations, that the respective predistorting coefficients of claims 1 and 10 are provided by a microcontroller performing a search algorithm. This is supported by the specification of the instant application, for example, in paragraphs [0115] - [0116] of the published application. See also, for example, Fig. 17 of the instant application. In contrast to the recitation in Applicant's new claims 17 and 18, neither the '619 patent (which takes the coefficients from a memory 7a of Fig. 1), nor the **BRIFFA** reference (which calculates the coefficients, as described above) provide the respective predistorting coefficients of claims 1 and 10 by a microcontroller performing a search algorithm, as required by claims 17 and 18. Thus, claims 17 and 18 are additionally believed to be unobvious over the '619 patent alone, or in combination with **BRIFFA**.

For the foregoing reasons, among others, Applicant's claims are believed to be patentable over the **BRIFFA** reference. The **JOHNSON**, **GIARDINA** and **WRIGHT** references do not cure the above

discussed deficiencies of the **BRIFFA** reference. As such, Applicant's claims are believed to be patentable over **BRIFFA**, **JOHNSON**, **GIARDINA** and **WRIGHT**, whether taken alone, or in combination.

It is accordingly believed that none of the references, whether taken alone or in any combination, teach or suggest the features of claims 1 and 10. Claims 1 and 10 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 1 or 10.

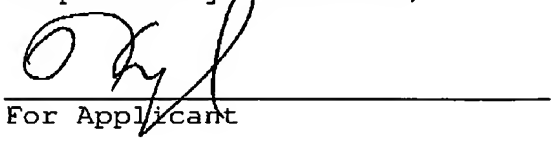
In view of the foregoing, reconsideration and allowance of claims 1 - 15 and 17 - 18 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,



Kerry P. Sisselman
Reg. No. 37,237

For Applicant

October 23, 2008

Lerner Greenberg Stemer LLP
Post Office Box 2480
Hollywood, FL 33022-2480
Tel: (954) 925-1100
Fax: (954) 925-1101